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10/628,115	07/28/2003	Hisham Menkara		3079

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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/628,115

Applicant(s)

MENKARA ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14, 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-7, 15, 18-22, 25 and 28 is/are rejected.
- 7) ☒ Claim(s) 23, 24, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/12/04, 8/18/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

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Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-7 and 15-28 of this application.

The provisional application only teaches the composition of claims 8-14. There is no teaching as to the amount of B in the provisional application or of any formulas where B is not present.

The disclosure is objected to because of the following informalities: The brief description of figure 2 does not refer to parts (a)-(c). Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no teaching of a light emitting device where the light source is a lamp which emits light having a frequency of between about 360 and about 480 nm.

Claims 25 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

These claims are identical and thus are duplicates. Applicant is advised that should claim 25 be found allowable, claim 28 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 15 and 22 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by the Derwent abstract for KR 2003060697.

This abstract teaches a phosphor used in a light emitting device comprising a UV emitting light emitting diode, which would have a wavelength in the claimed, having the formula  $(\text{Ba}_{1-x}\text{Sr}_x)_2\text{SiO}_4:\text{Eu}^{2+},z\text{M}$ , where M can be Ce, x is 0-1 and z is 0.0001-0.1. This formula falls within that claimed. This abstract teaches the claimed phosphor and device.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 5,422,538.

This references teaches a phosphor having the formula  $\text{Sr}_{2-x-y}\text{M}_x\text{SiO}_4:\text{Eu}^{2+}_y$ , where y is 0.0005-0.05, M is Ba and/or Ca and x is 0.01-0.1. This composition falls within that claimed.

Claims 1, 21, 25 and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patents 5,608,554; 6,278,135 or 6,429,583.

Claims 1, 21, 25 and 28 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. 6,555,958 or 6,621,211.

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All of these references teach light emitting devices comprising a light source and a blend of phosphors, where one of the phosphors has a formula that falls within that claimed. U.S. patent 5,608,554 teaches a device comprising a light emitting diode which emits light having a wavelength in the range of 380-420 nm and a blend of phosphors where one has the formula  $\text{Ba}_{2-x}\text{Sr}_x\text{SiO}_4:\text{Eu}^{2+}$ , where  $x=0-2$ . While the amount of europium is not taught, it is well known in the art that the amount is about 0.0001-0.1. U.S. patents 6,287,135; 6,429,583 and 6,555,958 teach a device comprising a light emitting diode which emits light having a wavelength in the range of 380-420 nm (6,555,958 and 6,278,135) or 450-470 nm (6,429,583) and a blend of phosphors where one has the formula  $\text{Ba}_2\text{SiO}_4:\text{Eu}^{2+}$ . While the amount of europium is not taught, it is well known in the art that the amount is about 0.0001-0.1. U.S. patent 6,621,211 teaches a device comprising phosphors having the formula  $\text{A}_2\text{SiO}_5:\text{xEu}^{2+}$ , where  $0 < x \leq 0.02$  and A is  $(\text{Ba}_{1-y-z}\text{Sr}_y\text{Ca}_z)$ , where y is 0-0.3, z is 0-0.1 and  $y+z \leq 0.4$  and a light source that emits light having a wavelength in the range of 360-420 nm selected from lamps, lasers or light emitting diodes.

Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. patent 6,656,608.

Column 59, lines 23-24 teaches phosphors having the formulas  $\text{Ba}_2\text{SiO}_4:\text{Eu}^{2+}$ ,  $\text{Sr}_2\text{SiO}_4:\text{Eu}^{2+}$  and  $(\text{Ba,Sr})_2\text{SiO}_4:\text{Eu}^{2+}$ . While the amount of europium is not taught, it is well known in the art that the amount is about 0.0001-0.1. The reference teaches the claimed phosphors.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Derwent abstract for KR 2003060697.

This abstract teaches a phosphor having the formula  $(\text{Ba}_{1-x}\text{Sr}_x)_2\text{SiO}_4:\text{Eu}^{2+},z\text{M}$ , where M can be Ce, x is 0-1 and z is 0.0001-0.1. The taught formula encompasses and overlaps the compositions of the claims. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphors.

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,422,538.

As discussed above, this reference teaches a phosphor having the formula  $\text{Sr}_{2-x-y}\text{M}_x\text{SiO}_4:\text{Eu}^{2+}$ , where y is 0.0005-0.05, M is Ba and/or Ca and x is 0.01-0.1. The taught formula overlaps the compositions of the claims. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphors.

Claims 4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,656,608.

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As discussed above, this reference teaches phosphors having the formulas  $\text{Sr}_2\text{SiO}_4:\text{Eu}^{2+}$  and  $(\text{Ba},\text{Sr})_2\text{SiO}_4:\text{Eu}^{2+}$ .  $(\text{Ba},\text{Sr})_2\text{SiO}_4:\text{Eu}^{2+}$  can be rewritten as  $(\text{Ba}_{1-x}\text{Sr}_x)_2\text{SiO}_4:\text{Eu}^{2+}$ , where  $0 < x < 1$ . While the amount of europium is not taught, it is well known in the art that the amount is about 0.0001-0.1. The taught formulas overlap the compositions of the claims. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphors.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,608,554.

Column 2, line 62 teaches a phosphor having the formula as  $\text{Ba}_{2-x}\text{Sr}_x\text{SiO}_4:\text{Eu}^{2+}$ , where  $x=0-2$ . While the amount of europium is not taught, it is well known in the art that the amount is about 0.0001-0.1. The taught formulas overlap the compositions of the claims. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphors.

Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,621,211.

Column 7, lines 20-34 teaches phosphors having the formula  $\text{A}_2\text{SiO}_5:x\text{Eu}^{2+}$ , where  $0 < x \leq 0.02$  and A is  $(\text{Ba}_{1-y-z}\text{Sr}_y\text{Ca}_z)$ , where y is 0-0.3, z is 0-0.1 and  $y+z \leq 0.4$ . The taught formulas overlap the compositions of the claims. Product claims with numerical ranges which overlap

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prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed phosphors. Claims 8-14, 16 and 17 are allowable over the cited art of record.

There is no teaching or suggestions of phosphors having the claimed formulas. The subject matter of claims 8-14 has an effective filing date of 17 May 2003, which means the Derwent abstract is not prior art over these claims.

Claims 23, 24, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion in the cited art of record of a device comprising the claimed phosphor blend.

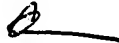
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (571) 272-1362.

The fax number for all official communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
January 14, 2005

  
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Primary Examiner  
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